

DRAFT

1-30-96

Sacramento River

Appendix 1

To provide necessary habitat, including appropriate water temperatures for the production of fish and protection of the riparian ecosystem in the mainstem Sacramento River, implement an interim integrated river regulation plan that balances carryover storage needs in Shasta Reservoir with instream flow needs consistent with the 1993 biological opinion for winter-run chinook salmon based on runoff and storage conditions.

Preliminary Flow Objectives (cfs)¹
April 1, 1996 through March 31, 1997

Recommended minimum Sacramento River flows cfs at Keswick Dam for October 1 to April 30 based on October 1 carryover storage in Shasta Reservoir and critically dry runoff conditions (driest decile runoff of 2.5 maf) to produce a target April 30 Shasta Reservoir storage of 3.0-3.2 maf for temperature control.

Keswick Dam (RM 302)			Carryover Storage (maf)	Keswick Release (cfs)
Month	Apr	5500 ^a	1.9 to 2.1	3,250
			2.2	3,500
	May ²		2.3	3,750
			2.4	4,000
	Jun ²		2.5	4,250
			2.6	4,500
	Jul-Sep ²		2.7	4,750
			2.8	5,000
	Oct-Jan ³	5500 ^a	2.9	5,250
			3	5,500
	Feb-Mar	5500 ^a		

¹In wet and above normal years, carryover a portion of (b)(2) water in Shasta Reservoir, for improved springtime flows and water availability in the Sacramento River.

²Experimental pulses (20,000-40,000 cfs at Bend Bridge [RM 258] for 3 or 4 days) to enhance juvenile outmigration in wet years and possibly above normal years. Pulses timed to augment and intensify turbid river flows produced by small/moderate natural runoff events between January 15 and May 15.

³Temperature criteria for winter-run chinook salmon will determine minimum flows during May through September.

³Because the water-year type is not estimated until February, minimum flows for October 1 through December 31, 1996 will be based on the water-year type for 1996 and reservoir storage conditions as of September 30, 1996. To be responsive to changing hydrologic conditions, flows may be ramped up or down in cooperation with CDFG, NMFS, and USBR, beginning January 1, 1997.